Maj Waller/jm

[redacted]

File
Vehicle 1110

[redacted]

OPR IMMEDIATE

X

6565TEST WG VANDENBERG AFB CALIF

AF SPACE SYSTEMS DIV LOS ANGELES CALIF

6594TEST WG /SATELLITE/ SUNNYVALE CALIF

LOCKHEED MISSILES & SPACE COMPANY SUNNYVALE CALIF

LOCKHEED MISSILES & SPACE COMPANY VANDENBERG AFB CALIF /COURIER/ ZEN

DOUGLAS AIRCRAFT COMPANY VANDENBERG AFB CALIF /COURIER/ ZEN

1 STRAT AEROSPACE DIV

INFO: 1 STRAT AD VANDENBERG AFB CALIF /COURIER/ ZEN

6595TEST WG VANDENBERG AFB CALIF /COURIER/ ZEN

6555TEST WG PATRICK AFB FLORIDA

CLASSIFICATION CHANGED TO
[redacted]
By Authority of ______
6 APR 1966

DOWNGRADED AT 3 YEAR INTERVALS;
DECLASSIFIED AFTER 12 YEARS
DOD DIR 5200.10

SECRET FROM [illegible]-7-[illegible]

LOGS FOR [illegible] 6594/TW FOR COL MOORE [illegible] LMSC/ SUNNYVALE FOR [illegible] DESFOR/ [illegible] LMSC/VAFB FOR [illegible] DAC/VAFB FOR MR. [illegible]MAN. INFO CLM 1 STRAT AD FOR COMMAND POST AND DOUGLAS [illegible] TW FOR

25

JUL 61

OFFICE SYMBOL	[illegible]				
NAME (SIGNATURE)	[redacted]	[redacted]			
DATE	Chesley [illegible] Waller, Major, USAF		LUCIUS A. PERRY, JR., Colonel, USAF Deputy for Space Systems		

AFBMD Form 11
1 Nov 59

COORDINATION SHEET

Replaces AFBMD Form 11, 1 Jun 59

AIR FORCE [illegible], Ogden, Utah

[redacted]

[illegible] VANDENBERG AFB CALIF
TWZE/MR. [illegible]/ [illegible] FOR COL [illegible]. SUBJECT
[illegible] DISCOVERER XXVII PRELIMINARY LAUNCH SUMMARY/[illegible]-
[illegible]. FOLLOWING IS THE 48-HOUR SUMMARY REPORT ON
THE LAUNCHING OF DISCOVERER XXVII /THOR 322/AGENA B 1118/.

1. [illegible] OPERATIONS [illegible]

A. PRELAUNCH COUNTDOWN OPERATIONS WERE STARTED AT [illegible] JULY 1961. THE FIRST HOLD WAS [illegible] AT T-[illegible] [illegible] RELAY COUNTDOWN ZERO TIME TO PERMIT [illegible] OF A TEAM [illegible] TO BE IN THE RANGE HAZARD AREA [illegible] LIFTOFF TIME. THE DURATION OF THIS HOLD WAS [illegible] MINUTES. HOLD NO. 2 WAS CALLED AT T-[illegible] MINUTES TO ALLOW [illegible] CORRECTION OF A RANGE SAFETY INSTRUMENTATION PROBLEM. THIS HOLD LASTED 9 MINUTES.

B. TERMINAL COUNTDOWN WAS STARTED AT 1526 PDT. AT THE START OF PHASE V OF THE TERMINAL COUNT, A PLANNED HOLD OF 2 MINUTES DURATION WAS CALLED TO ALLOW MORE THOROUGH CHILLING OF THE THOR VERNIER ENGINE LIQUID OXYGEN SYSTEM AND ALSO TO ALLOW THE THOR LOX TANK TOP PRESSURE TO DECAY TO THE SPECIFIED LEVEL. THE TERMINAL COUNTDOWN THEN PROGRESSED NORMALLY TO VEHICLE LIFTOFF AT [illegible]:00.46 PDT. THIS WAS THE FIRST ATTEMPT TO LAUNCH THE DISCOVERER

[redacted]

[redacted]

[illegible] TO VANDENBERG AFB CALIF

[illegible]

[illegible] ASCENT PHASE [illegible]

A. THE GYRO DATA TELEMETERED FROM BOTH THE THOR AND THE AGENA AND THE [illegible] POSITION DATA FROM THE THOR SHOW THAT A DIVERGENT OSCILLATION IN PITCH STARTED IMMEDIATELY AFTER LIFTOFF. INITIALLY, THE OSCILLATION FREQUENCY WAS ABOUT [illegible] CPS. AS THE AMPLITUDE OF THE OSCILLATION INCREASED, THE FREQUENCY DECREASED TO ABOUT [illegible] CPS AT T + [illegible] SECONDS. THE PEAK NORMAL ACCELERATIONS INDICATED BY AGENA TELEMETERED DATA INCREASED GRADUALLY TO APPROXIMATELY ±[illegible] G AT T + [illegible] SECONDS. THESE PEAK ACCELERATIONS THEN DECREASED SLOWLY TO APPROXIMATELY ±[illegible] G AT T + [illegible] SECONDS. AFTER T + [illegible] SECONDS THE NORMAL ACCELERATIONS WERE PREDOMINATELY NEGATIVE, VARYING BETWEEN APPROXIMATELY -[illegible] G AND -[illegible] G UNTIL T + 57.[illegible] SECONDS WHEN THE MAGNITUDE INCREASED RAPIDLY TO ABOUT -[illegible] G AT T + [illegible] SECONDS. THE MAGNITUDE OF THE ACCELERATION WAS STILL INCREASING AFTER T + [illegible] SECONDS, BUT WAS BEYOND THE ACCELEROMETER CALIBRATION. THE AGENA TELEMETRY SIGNAL WAS LOST ABRUPTLY AT T + [illegible] SECONDS, AND AT ABOUT THE TIME THE VTR TRI-HELIX LOST THE DOPPLER

VWZD [redacted]

[redacted]

[illegible] AFB CALIF

BEACON SIGNAL. [illegible] TELEMETRY SHOWS MAIN ENGINE CUTOFF AT T + [illegible] SECONDS. THE ENGINE CUTOFF WAS APPARENTLY COMMANDED BY THE VEHICLE ENGINE CUTOFF CIRCUIT AFTER THE CIRCUIT WAS ACTUATED BY A STRUCTURAL FAILURE. [illegible] THOR TELEMETERED INFORMATION WAS ALSO LOST AT THIS TIME. [illegible] PHOTOGRAPHS TAKEN FROM TRANQUILLON PEAK SHOW TWO FLASHES /POSSIBLY GLINT/ AT THE FORWARD END OF THE [illegible] VEHICLE AT T + [illegible].73 SECONDS AND T + 60.[illegible] SECONDS. AT T + 60.27 SECONDS A FIRE IS APPARENT AT THE VEHICLE FORWARD SECTION. AT T + 60.45 SECONDS THE [illegible] ENGINE FLAME SHORTENS INDICATING MECO, AND BY T + 61.2 SECONDS THE VEHICLE IS ENVELOPED BY FLAME. THE PHOTOS SHOW AN EXPLOSION AT T + 79.[illegible] SECONDS. THE REMAINING THOR TELEMETERED INFORMATION WAS LOST AT ABOUT THE SAME TIME EVEN THOUGH THE TRANSMITTER CARRIER CONTINUED. AT T + 96.1 SECONDS RANGE SAFETY TRANSMITTED A DESTRUCT SIGNAL. AT T + 1[illegible] SECONDS THE VTF VERLORT LOST THE AGENA RADAR BEACON SIGNAL AND THE TLM-18 LOST THE ACQUISITION BEACON SIGNAL. THE THOR TELEMETRY CARRIER WAS RECEIVED BY THE TLM-18 UNTIL T + 2[illegible] SECONDS.

5. THE TELEMETERED DATA INDICATE THAT ALL OF THE

VV2D

[redacted]

[redacted]

[illegible]

GYRO OUTPUTS WERE PRESENT BUT THAT THE THOR PITCH RATE GYRO SIGNAL WAS NOT GETTING TO THE THOR MAIN ENGINE PITCH SERVO-SYSTEM, BECAUSE OF AN OPEN OR SHORTED WIRE OR COMPONENT BETWEEN THE PITCH RATE AMPLIFIER DEMODULATOR AND THE INPUT TO THE MAIN ENGINE PITCH DIFFERENTIAL AMPLIFIER. THE PITCH RATE GYRO SIGNAL WAS APPARENTLY AFFECTING THE VERNIER ENGINE SERVOS IN A NORMAL MANNER.

C. STRUCTURAL FAILURE OF THE VEHICLE IS BELIEVED TO HAVE OCCURRED AT APPROXIMATELY T + 60 SECONDS BECAUSE OF THE HIGH NORMAL ACCELERATIONS WHICH RESULTED FROM THE PITCH OSCILLATIONS AND THE ACCOMPANYING AERODYNAMIC LOADS.

D. TRACKING DATA INDICATE THAT THE AGENA REACHED A MAXIMUM ALTITUDE OF ABOUT [illegible] FT. AND THAT IT IMPACTED ABOUT [illegible] FT. DOWNRANGE FROM THE PAD AT APPROXIMATELY T + [illegible] SECONDS.

3. PAD DAMAGE (U).

DAMAGE TO THE FACILITIES AND EQUIPMENT ON PAD 4 WAS LIGHT AND A NORMAL REHABILITATION SCHEDULE IS EXPECTED.

REF 4.

END

[redacted]